

U.S. Patent Appl'n. No. 10/822,464
Office Action Mailed August 19, 2004
Am't Dated December 20, 2004 (Monday)

CHANGES TO THE CLAIMS

Please amend claims 1-8, 10, 11 and 18-21 as follows.

1. (Currently Amended) ~~In a~~ harvesting machine comprising:
having a frame adapted for movement over the ground, the frame having a front end, an opposing rear end, and an ~~operator's platform,~~ operator platform:
an elongate crop harvesting header having a first end and a second opposing end, the first and second ends defining the length of the elongate header, the header supported at first and second support points, intermediate the first and second ends, by the frame across the front end of the frame for generally vertical movement relative to the ground; ~~and ground, the improvement comprising:~~
a header lift and flotation system interconnecting the header and the frame for selectively raising and lowering the header relative to the ground and setting flotation parameters, the header lift and flotation system ~~including:~~ including left and right hand hydraulic cylinders interconnecting the frame and the header adjacent the respective first and second support points; a hydraulic fluid reservoir; an electro-hydraulic ~~circuit,~~ circuit; a manually manipulable switch; and an electronic programmable controller,
the electro-hydraulic circuit including valves operated by electrical signals; ~~interconnecting- that interconnect~~ the hydraulic fluid reservoir and the respective left and right hand hydraulic ~~cylinders;~~
~~a manually manipulated switch;~~

U.S. Patent Appl'n. No. 10/822,464
Office Action Mailed August 19, 2004
Am't Dated December 20, 2004 (Monday)

~~an~~ cylinders, and the electronic programmable controller interconnecting the switch and the valves such that manipulation of the switch causes the controller to emit electrical signals to the valves to establish flotation and lift settings ~~therefor~~ for the valves,
wherein the electronic programmable controller controls the valves of the electro-hydraulic circuit to apply hydraulic pressure to one of the left and right hand hydraulic cylinders, thereby applying a hydraulic counterweight.

2. (Currently Amended) The ~~improvement of~~ harvesting machine according to claim 1, wherein: ~~wherein~~ the electro-hydraulic circuit ~~further~~ includes an hydraulic pump and a single hydraulic accumulator.

3. (Currently Amended) The harvesting machine according to claim ~~improvement of Claim 2, wherein:~~ wherein the switch is located on the ~~operator's~~ operator platform.

4. (Currently Amended) The harvesting machine according to ~~improvement of~~ claim 3, wherein: ~~wherein~~ the switch is a rocker switch.

5. (Currently Amended) The harvesting machine according to ~~improvement of~~ claim 4, wherein: ~~wherein~~ each of the left and right hand hydraulic cylinders has a lifting end which, when hydraulic oil under pressure is applied, raises the header, and the

U.S. Patent Appl'n. No. 10/822,464
Office Action Mailed August 19, 2004
Am't Dated December 20, 2004 (Monday)

two lifting ends of the left and right hand hydraulic cylinders are hydraulically connected together and thence to the hydraulic pump, a control manifold and the accumulator; and

the switch has a first position that signals the controller to allow hydraulic oil to enter the accumulator to reduce header contact force with the ground.

6. (Currently Amended) The harvesting machine according to improvement of claim 5, ~~wherein:~~wherein the switch has a second position that signals the controller to allow hydraulic oil to exit the accumulator to increase header contact force with the ground.

7. (Currently Amended) The harvesting machine according to improvement of claim 6, further ~~including:~~comprising a pressure reducing valve located in the hydraulic circuit such that through manipulation of the pressure reducing valve hydraulic pressure can be selectively applied to one or the other of the left and right hand hydraulic cylinders.

8. (Currently Amended) The harvesting machine according to improvement of claim 7, ~~wherein:~~wherein the pressure reducing valve is electro-hydraulic; and a second switch is located on the ~~operator's platform;~~ operator platform and is electrically connected to the pressure reducing valve to control the pressure reducing valve to selectively apply hydraulic pressure to one or the other of the left and right hand hydraulic cylinders.

U.S. Patent Appl'n. No. 10/822,464
Office Action Mailed August 19, 2004
Am't Dated December 20, 2004 (Monday)

9. (Original) In a harvesting machine having a frame adapted for movement over the ground, the frame having a front end, an opposing rear end, and an operator's platform, an elongate crop harvesting header having a first end and a second opposing end, the first and second ends defining the length of the elongate header, the header supported at first and second support points, intermediate the first and second ends, by the frame across the front end of the frame for generally vertical movement relative to the ground, the improvement comprising:

a header lift and flotation system interconnecting the header and the frame for selectively raising and lowering the header relative to the ground and setting flotation parameters, the header lift and flotation system including:

left and right hand hydraulic cylinders interconnecting the frame and the header adjacent the respective first and second support points;

a hydraulic fluid reservoir;

substantially independent left and right hand electro-hydraulic circuits, including valves operated by electrical signals, interconnecting the hydraulic fluid reservoir and the respective left and right hand hydraulic cylinders;

left and right hand manually manipulated switches;

an electronic programmable controller interconnecting the switches and the valves such that independent manipulation of the switches causes the controller to emit electrical signals to the valves to establish independent flotation and lift settings for the left and right hand hydraulic cylinders.

U.S. Patent Appl'n. No. 10/822,464
Office Action Mailed August 19, 2004
Am't Dated December 20, 2004 (Monday)

10 (Currently Amended) ~~he~~The improvement of claim 9, further ~~including~~including a pressure reducing valve located in the hydraulic circuit such that through manipulation of the pressure reducing valve hydraulic pressure can be selectively applied to one or the other of the left and right hand hydraulic cylinders.

11. (Currently Amended) The improvement of claim 10, wherein:
the pressure reducing valve is electro-hydraulic; and
a second switch is located on the ~~operator's platform~~operator platform and is electrically connected to the pressure reducing valve to control the pressure reducing valve to selectively apply hydraulic pressure to one or the other of the left and right hand hydraulic cylinders.

12. (Original) The improvement of claim 11, wherein:
the electro-hydraulic circuit further includes an hydraulic pump and a single hydraulic accumulator.

13. (Original) The improvement of Claim 12, wherein:
the switch is located on the operator's platform and is a rocker-type switch.

14. (Original) The improvement of claim 9, wherein:
the switch has a first position that signals the controller to allow hydraulic oil to enter the accumulator to reduce header contact force with the ground, and

U.S. Patent Appl'n. No. 10/822,464
Office Action Mailed August 19, 2004
Am't Dated December 20, 2004 (Monday)

the switch has a second position that signals the controller to allow hydraulic oil to exit the accumulator to increase header contact force with the ground.

15. (Original) The improvement of claim 14 wherein:

the valves return to the preset flotation condition whenever the float mode is selected, irrespective of subsequent header lift and lower operations.

16 (Original) A crop harvesting machine comprising:

a self-propelled frame adapted for movement over the ground, the frame having a front end, an opposing rear end;

an operator's platform affixed to and supported by the frame;

an elongate crop harvesting header having a first end and a second opposing end, the first and second ends defining the length of the elongate header, the header supported at first and second support points, intermediate the first and second ends, by the frame across the front end of the frame for generally vertical movement relative to the ground;

a header lift and flotation system interconnecting the header and the frame for selectively raising and lowering the header relative to the ground and setting flotation parameters, the header lift and flotation system including:

left and right hand hydraulic cylinders interconnecting the frame and the header adjacent the respective first and second support points;

a hydraulic fluid reservoir;

U.S. Patent Appl'n. No. 10/822,464
Office Action Mailed August 19, 2004
Am't Dated December 20, 2004 (Monday)

an electro-hydraulic circuit, including valves operated by electrical signals, interconnecting the hydraulic fluid reservoir and the respective left and right hand hydraulic cylinders;

the left and right hand hydraulic cylinders are hydraulically connected such that hydraulic oil is sent to the return side of the respective cylinder on the lighter side of the header;

a manually manipulated switch; and

an electronic programmable controller interconnecting the switch and the valves such that manipulation of the switch causes the controller to emit electrical signals to the valves to establish flotation and lift settings for the left and right hand hydraulic cylinders.

17. (Original) The crop harvesting machine of claim 16, wherein:

the electro-hydraulic circuit further includes an hydraulic pump and single hydraulic accumulator.

18. (Currently Amended) The ~~improvement~~ crop harvesting machine of Claim 17, wherein:

the switch is located on the operator's platform.

19. (Currently Amended) The crop harvesting machine ~~improvement~~ of claim 18, wherein:

the switch is a rocker switch;

U.S. Patent Appl'n. No. 10/822,464
Office Action Mailed August 19, 2004
Am't Dated December 20, 2004 (Monday)

the switch has a first position that signals the controller to allow hydraulic oil to enter the respective accumulator to reduce header contact force with the ground; and

the switch has a second position that signals the controller to allow hydraulic oil to exit the respective accumulator to increase header contact force with the ground.

20. (Currently Amended) The crop harvesting machine improvement of claim 18, further including:

a pressure reducing valve located in the hydraulic circuit such that through manipulation of the pressure reducing valve hydraulic pressure can be selectively applied to one or the other of the left and right hand hydraulic cylinders.

21. (Currently Amended) The crop harvesting machine improvement of claim 20, wherein:

the pressure reducing valve is electro-hydraulic; and

a second switch is located on the operator's platform, and is electrically connected to the pressure reducing valve to control the pressure reducing valve to selectively apply hydraulic pressure to one or the other of the left and right hand hydraulic cylinders.